UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,561	02/08/2006	Kota Iwamoto	040447-0276	6623

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EXAMINER
WOLDEMARIAM, AKILILU K

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/567,561</td><td>Applicant(s)
IWAMOTO, KOTA</td><td></td></tr>
<tr><td>Examiner
AKLILU k. WOLDEMARIAM</td><td>Art Unit
2624</td><td></td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>11/03/2009</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4,25-32,50,51 and 59</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-4,25-32,50,51 and 59</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>08 February 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
     1.☐ Certified copies of the priority documents have been received.
     2.☐ Certified copies of the priority documents have been received in Application No. _____.
     3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date <u>See Continuation Sheet</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :01/18/2008, 12/05/2006, 02/08/2006.

DETAILED ACTION

Response to Amendment

1.   Claims 1-4, 27, 51 and 59 have been amended.   Claims 1-4, 25-32, 50-51 and

59 are still pending with claims 1, 51 and 59 being an independent.

Response to Arguments

2.   Applicant's arguments see 28-29, filed 11/03/2009, with respect to the rejection

of claim 1-4, 25-32, 50-51 and 59 under 35 U.S.C 103 rejection have been fully

considered and are persuasive.   Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of

Yamaguchi et al., "Yamaguchi" (U.S. Patent number 6, 345, 111).

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 1-4 and 25-32 and 50 rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claims contain subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. In claim 1, lines 2-3, claim

limitation, *" a probability model of a probability for an editing process to be applied to an*

image inputted thereto" this claim limitation does not have any relationship to body of

claim 1. Therefore above claims are rejected under 112 first paragraph written

description requirement. And Examiner suggested claim amendment to overcome the

above rejection and also claims examined as best understood by examiner.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claim 59 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi

et al., "Yamaguchi" (U.S. Patent number 6, 345, 111).

Regarding claim 59, *Yamaguchi discloses* a computer readable medium storing

an image similarity calculation program for allowing a computer to perform a process of:

inputting an inquiry image *(fig.14 and col.16, 43-45, input section 11101)*;

comparing a feature quantity for each divided small region of the inquiry image

with a feature quantity for each divided small region of a reference image *(see fig.14*

and col.16, line 54, comparison section 1206); and

calculating an image similarity between the inquiry image and the reference image

(i.e., pattern matching that will refer to calculating image similarity), based on a feature

quantity comparison result output by the comparing step *(fig.14 and col.16, lines 54-63).*

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-4, 25-32 , 50-51 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Yamaguchi as applied in above , and in view of Peng et al.,

("Probabilistic Feature Relevance Learning for content-Based Image Retrieval",

computer vision and image understanding, vol.75, nos.l/2 July/August 1999, pp. 150-

154 from IDS).

Regarding claim 1, *Yamaguchi discloses* an image similarity calculation system

comprising:

a small region compare unit configured to compare a feature quantity for each

divided small region of an inquiry image with a feature quantity for each divided small

region of a reference image *(see fig.14 and col.16, line 54, comparison section 1206)*;

and

an image similarity calculation unit configured to calculate an image similarity

between the inquiry image and the reference image (i.e., pattern matching that will refer

to calculating image similarity), based on a comparison result output by the small region

compare unit *fig.14 and col.16, lines 54-63).*

Yamaguchi does not disclose an editing probability model estimation unit

configured to use a probability model of a probability for an editing process to be applied

to an image inputted thereto.

However, Peng discloses an editing probability model estimation unit configured to

use a probability model of a probability for an editing process to be applied to an image

inputted thereto *(see pages 152-153, col.2, probabilities measure that will calculate a local region editing probability).*

It would have been obvious to ordinary skill in the art at the time when invention was made to use Peng's an editing probability model estimation unit configured to use a probability model of a probability for an editing process to be applied to an image inputted thereto in Yamaguchi's an image similarity calculation method performed by a computer and comprising because it will allow to achieve overall optimal performance, *[Peng, page 150, col.2].*

Regarding claim 2, *Peng discloses* the image similarity calculation system according to claim 1, wherein

the probability model (probabilities) is determined for each region *(see pages 152-153, col.2);* and

the image similarity calculation unit *(fig.2, a system calculation unit)* is configured to use the probability model when comparing the feature quantity for each divided small region of the inquiry image and the feature quantity for each divided small region of the reference image *(i.e., compute the similarity between the query and all images in the databases (see page 151 and fig.2 and col.2).*

Regarding claim 3, *Peng discloses* the image similarity calculation system according to claim 1, wherein the image similarity calculation unit *(fig.2, a system calculation unit)* is configured to use the probability model when calculating the image similarity between the inquiry image and the reference image *(see page 151, fig.2 and*

column 2, the system carries out image retrieval using a K-NN search based on current

weightings to compute the similarity between the query and all images in the database).

Regarding claim 4, the image similarity calculation system according to claim 1,

wherein

the probability model *(probabilities measure)* is determined for each region (see

pages 152-153, col.2); and

the image similarity calculation unit *(fig.2, a system calculation unit)* is configured to

use the probability model when comparing the feature quantity for each divided small

region of the inquiry image and   the feature quantity for each divided small region of the

reference image *(see page 151, fig.2 and column 2, the system carries out image*

retrieval using a K-NN search based on current weightings to compute the similarity

between the query and all images in the database) and

when calculating the image similarity between the inquiry image and the reference

image *(see page 151, fig.2 and column 2, the system carries out image retrieval using a*

K-NN search based on current weightings to compute the similarity between the query

and all images in the database).

Regarding claim 25, *Peng discloses* the image similarity calculation system

according to claim 1, wherein the local region is a divided region so as to correspond to

a small region in the inquiry image or the reference image *(see pages 155-156,*

computed with sub region and partitioning that will refer to divide).

Regarding claim 26, *Peng discloses* the image similarity calculation system

according to claim 1, wherein a small region in the inquiry image or the reference image

is an equally sized rectangular region resulting from dividing an image *(see pages 155-156, computed with sub region and partitioning that will referred to divide)*.

Regarding claim 27, the image similarity calculation system according to claim 1 wherein a small region in the inquiry image or the reference image is one of regions which are divided so as to be partially overlap with each other, and wherein each small region is weighted in proportion to overlapping areas (overlapping) (see page 152, col.2 and *pages 155-156, computed with sub region and partitioning that will referred to divide)*.

Regarding claim 28, *Peng discloses* the image similarity calculation system according to claim 1, wherein a small region in the inquiry image or the reference image results from dividing only part of an image *pages 155-156, computed with sub region and partitioning that will referred to divide)*.

Regarding claim 29, *Peng discloses* the image similarity calculation system according to claim 1, wherein the feature quantity is based on at least one of color information, edge information, texture information, shape information, and motion information *(see pages 150-151, generally, a set of features (color, shape, texture and etc))*.

Regarding claim 30, *Peng discloses* the image similarity calculation system according to claim 1 wherein the feature quantity is at least one of an average value, a mode value, and a median value for color coordinates specified in color space systems such as RGB color space, HSV color space, YUV color space, YIQ color space, YCbCr color space, L*a*b* color space, and XYZ color space, and Dominant Color, Color

Layout, Scalable Color, Color Structure, Edge Histogram, Homogeneous Texture,

Texture Browsing, Contour Shape, and Shape 3D specified in international standard

ISO/IEC 15938-3 *(see pages 150-151, generally, a set of features (color, shape, texture*

and etc)).

Regarding claim 31, *Peng discloses* the image similarity calculation system

according to claim 1, wherein the editing process corresponds to at least one of

superposing a ticker on an image, superposing a caption on an image, superposing a

character on an image, superposing an object on an image, partially cutting an image,

partially cropping an image, partially mosaicking an image, and partially blurring an

image *(see page 152, col.2, overlapping that will refer to superposing)*

Regarding claim 32, *Peng discloses* an image retrieval system (system) to retrieve

images using an image similarity calculated in the image similarity calculation system

according to claim 1 *(see page 151, fig.2 and column 2, the system carries out image*

retrieval using a K-NN search based on current weightings to compute the similarity

between the query and all images in the database).

Regarding claim 50, *Peng discloses* an image retrieval system (system) to output

an image similar to an inquiry image from a plurality of reference images based on a

calculated image similarity using an image similarity calculation system according to

claim *1 (see page 151, fig.2 and column 2, the system carries out image retrieval using*

a K-NN search based on current weightings to compute the similarity between the query

and all images in the database).

Regarding claim 51, *Yamaguchi discloses* an image similarity calculation method

performed by a computer and comprising the steps of:

inputting an inquiry image *(fig.14 and col.16, 43-45, input section 11101)*;

comparing a feature quantity for each divided small region of the inquiry image

with a feature quantity for each divided small region of a reference image *(see fig.14*

and col.16, line 54, comparison section 1206); and calculating an image similarity

between the inquiry image and the reference image (i.e., pattern matching that will refer

to calculating image similarity), based on a feature quantity comparison result output by

the comparing step *(fig.14 and col.16, lines 54-63)*.

Yamaguchi does not disclose calculating a local region editing probability from the

inputted inquiry image.

However Peng discloses calculating a local region editing probability from the

inputted inquiry image *(see pages 152-153, col.2, probabilities measure that will*

calculate a local region editing probability).

It would have been obvious to ordinary skill in the art at the time when invention

was made to use Peng's calculating a local region editing probability from the inputted

inquiry image in Yamaguchi's an image similarity calculation method performed by a

computer and comprising because it will allow to achieve overall optimal performance,

[Peng, page 150, col.2].

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to AKLILU k. WOLDEMARIAM whose telephone number is

(571)270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-

5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bali Vikkram can be reached on 571-272-7415. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DANIEL G MARIAM/
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Patent Examiner, Art Unit 2624
01/30/2010